

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant : Hong, et al.  
Appl. No. : 10/743,866  
Filed : December 24, 2003  
For : SECONDARY BATTERY AND  
MANUFACTURING METHOD OF  
THEREOF  
Examiner : Echelmeyer, Alix Elizabeth  
Group Art Unit : 1795

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John M. Carson, Reg. No. 34,303

**REPLY BRIEF TO EXAMINER'S ANSWER**

Mail Stop Appeal Brief -- Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

In reply to the Examiner's Answer mailed on July 29, 2010, Appellant submits this Reply Brief to address the arguments presented therein.

**Summary of Examiner's rejections** begin on page 2 of this paper.

**Remarks** begin on page 3 of this paper.

**Summary of Examiner's Rejections**

In the Examiner's Answer, the Examiner maintains the rejection of all pending claims:

- (1) The Examiner maintains that Claims 1-7, 10 and 15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Morishita (U.S. Patent No. 5,976,729) in view of Slezak (U.S. Patent Application Publication No. 2004/0058234) and Nakanishi (U.S. Patent Application Publication No. 2002/0142211).
- (2) The Examiner maintains that Claims 8 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Morishita in view of Slezak and Nakanishi further in view of Seiji (Japan 60-124351).
- (3) The Examiner maintains that Claims 13 and 14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Morishita in view of Slezak and Nakanishi further in view of Shibata (EP 0 899 799 A2).

Appellant addresses each of the above issues in the remarks below.

**REMARKS**

**Claims 1-7, 10 and 15 are patentable over the combination of Morishita, Slezak and Nakanishi**

Appellant respectfully submits that pending Claims 1-7, 10 and 15 are allowable over the combination of the cited references as discussed below.

**Standard of *Prima facie* Obviousness**

The rationale to support a conclusion that the claim would have been obvious is that all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination yielded nothing more than predictable results to one of ordinary skill in the art. It can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. If any of these findings cannot be made, then this rationale cannot be used to support a conclusion that the claim would have been obvious to one of ordinary skill in the art. M.P.E.P. § 2143.

If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984). M.P.E.P. §2143.01.

Rejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *KSR International Co. v. Teleflex Inc.*”, 550 U.S., 82 U.S.P.Q.2d at 1396 quoting *In re Kahn*, 441 F.3d 977, 988, 78 U.S.P.Q.2d 1329, 1336 (Fed. Cir. 2006). M.P.E.P. § 2143.01.

Patentability of Pending Claims 1-7, 10 and 15

Claim 1 recites, among other things, a surface coating having a thickness of 30  $\mu\text{m}$  to 100  $\mu\text{m}$  *provided on an outer surface* of only the bottom portion of the can and not provided on the side wall of the can. Appellant respectfully submits that the cited references, alone or in combination, fail to teach the above-indicated feature of Claim 1.

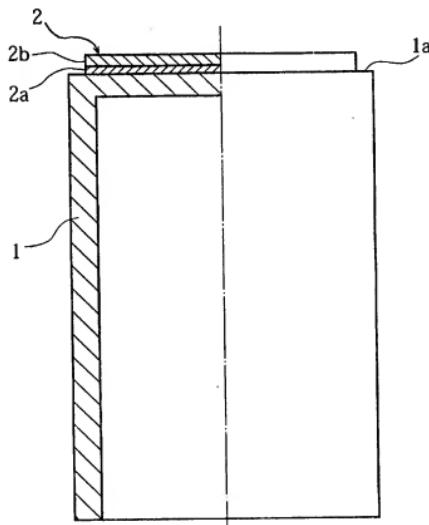
The Examiner stated that column 5, lines 30-38 of Morishita teaches the nickel layer (2b) having a thickness of 100  $\mu\text{m}$ . *See* the Examiner's Answer at page 4, second paragraph. The Examiner also stated that paragraph [0106] of Slezak teaches a nickel plating layer formed on the outside surface of a battery can. *See* the Examiner's Answer at page 5, third paragraph. Appellant believes that the Examiner meant to cite paragraph [0105], and accordingly, arguments will be presented below based on this interpretation of the brief.

The Examiner concluded that one of ordinary skill in the art could have substituted the nickel plating layer of Slezak for the welded nickel layer of Morishita, and the results of the substitution would have been predictable. *See* the Examiner's Answer at page 5, third paragraph. Appellant respectfully disagrees.

**1. The replacement of the Morishita nickel plate with the Slezak nickel plating layer does not result in the claimed surface coating.**

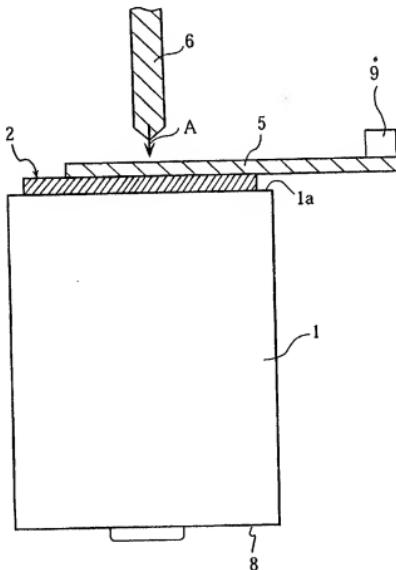
Referring to FIG. 4 (see below), Morishita shows that the first layer (2a) of the nickel plate (2) formed on the bottom of the battery can (1) and the second layer (2b) of the nickel plate (2) formed on the first layer (2a). The Examiner stated that since the nickel layer (2b) has a thickness of 100 µm, the second nickel layer (2b) could be replaced with the nickel plating layer of Slezak. Appellant would like to point out that such replacement does not teach "a surface coating having a thickness of 30 µm to 100 µm *provided on an outer surface* of only the bottom portion of the can" recited in Claim 1. Such a modified layer would not be provided on an outer surface of the bottom portion of the can (1), because the first layer (2a) is interposed between the second nickel layer (2b) and the bottom portion of the can (1), as clearly seen from FIG. 4 below.

Fig. 4



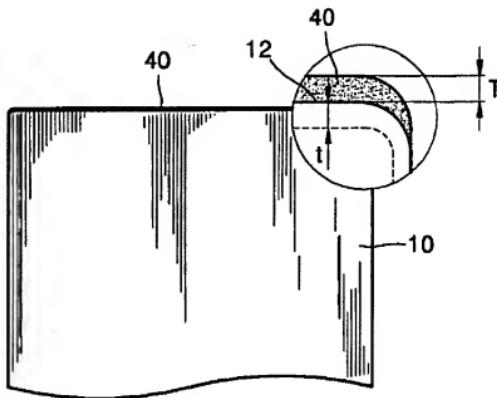
Furthermore, even if the single nickel plate (2) of Morishita is replaced with the nickel plating layer of Slezak and *provided on an outer surface of the can*, such a modified layer would not have a thickness of 30  $\mu\text{m}$  to 100  $\mu\text{m}$ , because the single nickel plate (2) formed on the can (1) has a thickness of 0.15mm or 150  $\mu\text{m}$ . See FIG. 3 below and column 4, line 10 of Morishita. Furthermore, Slezak does not describe a thickness of this nickel plating.

Fig. 3



In contrast, Claim 1 recites a surface coating having a thickness of 30  $\mu\text{m}$  to 100  $\mu\text{m}$  provided on an outer surface of only the bottom portion of the can. See, for example, FIG. 2 below.

FIG. 2



In view of the above, Appellant respectfully submits that the replacement of the Morishita nickel plate with the Slezak nickel plating layer does not teach the claimed surface coating.

**2. The proposed modification would render the prior art device being modified unsatisfactory for its intended purpose**

The purpose of Morishita is to perform resistance welding on the two lead plates (2, 5) using the resistance-welding electrodes (6). See column 4, lines 60-61, column 4, lines 25-32, column 5, line 67-column 6, line 7, column 6, lines 43-45 and 60-63, and Figures 3 and 7.

As described in the website of "<http://www.weldingengineer.com/1%20Resistance.htm>" (see an excerpted portion thereof below), resistance welding is generally performed between two pieces of metal.

*Resistance Welding*

Resistance Spot Welding (RSW), Resistance Seam Welding (RSEW), and Projection Welding (PW) are commonly used resistance welding processes. Resistance welding uses the application of electric current and mechanical pressure to create a weld between two pieces of metal. Weld electrodes conduct the electric current to the two pieces of metal as they are forged together.

As shown in Figures 3 and 7 of Morishita, resistance welding is and needs to be performed between two pieces of metal (plates 2 and 5). Thus, Appellant respectfully submits that if the nickel plate (metal sheet) of Morishita is replaced with the nickel plating of Slezak, the proposed modification would render the modified Morishita device unsatisfactory for its intended purpose, because the modified coating layer is not a metal sheet and thus would be unsuitable for resistance welding. Appellant would like to remind the Examiner that if proposed modification would render the prior art device being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984). M.P.E.P. §2143.01.

**3. The Examiner's rejections on obviousness are mere conclusory statements**

As discussed above, the Examiner stated that one of ordinary skill in the art could have substituted the nickel plating layer of Slezak, formed on a steel can, for the welded nickel plate of Morishita, attached onto an aluminum can, and the results of the substitution would have been predictable. In doing so, the Examiner did not provide any rationale regarding how these two different elements can be substituted on different substrate metals. Slezak does not address adhesion of nickel to aluminum as a surface coating. Thus, predictability of this combination is neither shown nor would have been known by a skilled artisan looking to modify Morishita. Appellant would like to remind the Examiner that rejections on obviousness cannot be sustained

by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. M.P.E.P. § 2143.01.

Moreover, Appellant respectfully submits that various embodiments of the claimed invention provide certain advantages. For example, when the thickness of the surface coating is in the range of 30 µm to 100 µm, an appropriate welding strength can be ensured even by welding of a lead and an increase in the weight and volume of the battery can also be suppressed. See paragraph [0048] of the published application. Thus, the coating with the defined range can noticeably reduce the thickness of the bottom portion of the can compared to conventional batteries, where a nickel plate is adhered to the can by welding.

#### 4. Summary

As discussed above, the combination of Morishita and Slezak fails to teach “a surface coating having a thickness of 30 µm to 100 µm provided on an outer surface of only the bottom portion of the can and not provided on the side wall of the can” recited in Claim 1.

Nakanishi was cited merely to supposedly show certain features which are unrelated to the above-indicated feature of Claim 1, and this reference does not remedy the deficiencies of Morishita and Slezak. Therefore, the combination of the cited references does not teach or suggest all of the features of Claim 1. Accordingly, Appellant respectfully submits that not all the claimed elements were known in the prior art. Further, the Examiner did not provide sufficient articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. In view of the above, Appellant respectfully submits that no *prima facie* case of obviousness has been established with respect to Claim 1, and thus Claim 1 is allowable over the cited references.

Claims 2-7, 10 and 15 depend from base Claim 1, and further define additional technical features of the present invention. In view of the patentability of their base claim, and in further view of the additional technical features, Appellant respectfully submits that the dependent claims are patentable over the cited references. Furthermore, Appellant does not necessarily agree with the characterizations of the cited references made by the Examiner in rejecting the dependent claims.

**Claims 8 and 9 are patentable over the combination of Morishita, Slezak, Nakanishi and Seiji**

The rejected claims (8 and 9) all depend from independent Claim 1. When independent Claim 1 is patentable over the combination of the cited references, all the dependent claims are patentable. Thus, Appellant first discusses the patentability of independent Claim 1.

As discussed above, the combination of Morishita, Slezak and Nakanishi does not teach the feature of “a surface coating having a thickness of 30  $\mu\text{m}$  to 100  $\mu\text{m}$  provided on an outer surface of only the bottom portion of the can and not provided on the side wall of the can” recited in Claim 1.

Seiji was cited merely to supposedly show certain features of dependent Claims 8 and 9, and this reference does not remedy the deficiencies of Morishita, Slezak and Nakanishi. Therefore, the combination of the cited references does not teach or suggest all of the features of independent Claim 1.

Therefore, Appellant respectfully submits that no *prima facie* case of obviousness has been established with respect to Claim 1, and the independent claim is allowable over the cited references. Claims 8 and 9 depend from base Claim 1, and further define additional technical features of the present invention. In view of the patentability of their base claim, and in further view of the additional technical features, Appellant respectfully submits that the dependent claims are patentable over the cited references. Furthermore, Appellant does not necessarily agree with the characterizations of the cited references made by the Examiner in rejecting the dependent claims.

**Claims 13 and 14 are patentable over the combination of Morishita, Slezak, Nakanishi and Shibata**

The rejected claims (13 and 14) all depend from independent Claim 1. When independent Claim 1 is patentable over the combination of the cited references, all the dependent claims are patentable. Thus, Appellant first discusses the patentability of independent Claim 1.

As discussed above, the combination of Morishita, Slezak and Nakanishi does not teach the feature of “a surface coating having a thickness of 30  $\mu\text{m}$  to 100  $\mu\text{m}$  provided on an outer

surface of only the bottom portion of the can and not provided on the side wall of the can" recited in Claim 1.

Shibata was cited merely to supposedly show certain features of dependent Claims 13 and 14, and this reference does not remedy the deficiencies of Morishita, Slezak and Nakanishi. Therefore, the combination of the cited references does not teach or suggest all of the features of independent Claim 1.

Therefore, Appellant respectfully submits that no *prima facie* case of obviousness has been established with respect to Claim 1, and the independent claim is allowable over the cited references. Claims 13 and 14 depend from base Claim 1, and further define additional technical features of the present invention. In view of the patentability of their base claim, and in further view of the additional technical features, Appellant respectfully submits that the dependent claims are patentable over the cited references. Furthermore, Appellant does not necessarily agree with the characterizations of the cited references made by the Examiner in rejecting the dependent claims.

**CONCLUSION**

In view of the foregoing arguments, Appellant respectfully submits that all pending claims are patentable over the cited references. Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP



Dated: 9/29/10

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